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ABSTRACT

It is traditionally assumed that licensure of healthcare professionals means that they are minimally competent. Many nursing specialty organizations offer examinations and other processes for certification, suggesting that certification is associated with continued competency. Can standardized examination for certification and continuing education for recertification ensure continued competency? Continuing education and testing provide a limited picture of an individual's knowledge and/or skill acquisition in a limited area at one point in time. However, portfolios promote critical thinking, self-assessment, and individual accountability. A portfolio is a portable mechanism for evaluating competencies that may otherwise be difficult to assess. This article summarizes some of the literature addressing portfolios, including aspects of portfolio development process, the value of portfolios versus continuing education for competency assessment, evidence associated with portfolio usage, and suggestions for organizing nursing portfolios.

The complex world of healthcare delivery is changing and evolving at a revolutionary rate. Our knowledge and skills must adapt to the constant change of landscape and issues facing professionals. As evidence-based decision making for patient care is discussed in the literature, should evidence of professional knowledge and skills also be expected from healthcare professionals?[1] Currently, it is assumed that registered nurse licensure deems minimal competency. Can we have faith that a standardized examination ensures continued competency throughout one's career? As many institutions seek American Nurses Credentialing Center (ANCC) Magnet Recognition Program accreditation, minimal competency is not enough to be branded with a stamp of excellence.

Continued competency has been defined as the application of knowledge and the interpersonal, decision-making, and psychomotor skills expected for the nurse's practice role, within the context of public health and safety.[2,3] Many nursing specialty organizations offer examinations and other processes for certification, suggesting that certification is associated with continued competency. Competency has been defined as a "documented validation of the professional achievement of identified standards of practice of an individual registered nurse."[4] Board certification has been linked to competency and has been found to have intrinsic and extrinsic rewards.[5,6] Although most professional organizations provide initial certification based on a standardized examination, portfolios have been used by some organizations to convey a collection of work exemplifying a range of achievements and abilities.[7]

The use of professional portfolios to profile the scope and depth of a clinician's practice competence is gaining popularity. A portfolio is a portable mechanism for evaluating competencies that may otherwise be difficult to assess, such as practice-based improvements, use of scientific evidence in practice, professional behavior, and creative endeavors. Content included in a portfolio can be concrete or abstract reflections of personal growth and development. Portfolios are dynamic and potentially offer a fuller and richer image of the individual than traditional assessments.

This article summarizes some of the literature addressing portfolios, including organizational initiatives, use in education, aspects of the portfolio development process, the value of portfolios versus continuing education for competency assessment, evidence associated with portfolio usage, and suggestions for organizing nursing portfolios.

ORGANIZATIONAL INITIATIVES

The Institute of Medicine (IOM) stunned the nation in 1999 with the report *To Err Is Human: Building a Safer Health System*, which states that 44,000 to 98,000 people die of preventable medical errors each year.[8] One of the concerns identified in the report was the length of time between discovery of more effective treatments and their incorporation into routine patient care. To remain contemporary and safe in practice, the IOM recommended the implementation of periodic reexamination and relicensing of physicians, nurses, and other healthcare providers. The IOM also has observed that there were no consistent methods for ensuring the continued competence of health professionals within the current state licensing functions.[9]

In 2003, the IOM issued another report, *The Education of Health Care Professionals: A Bridge to Quality*, in which professional competency was viewed as a shared responsibility of both the public and private sectors.[10] The IOM recommended that all professional boards move toward requiring licensed healthcare professionals to demonstrate periodically their ability to deliver care within 5 competencies. These career encompassing competencies are (1) deliver patient-centered care, (2) be members of an interdisciplinary team, while emphasizing (3) evidence-based practice, (4) quality improvement, and (5) informatics.[10]

An organization aligned with the concerns uncovered by the IOM is the Citizen Advocacy Center (CAC), which has asked the question, "Can the public be confident that healthcare professionals, who demonstrated minimum levels of competence when they earned their licenses, continue to be competent years and decades after they have been in practice?" Currently, the overwhelming opinion is "no."[11]

In 2004, the CAC presented a road map for continued competence.[12] This road map is a 2-phased plan built upon the actions of conducting research, seeking regulatory mandates, using evidence-based methods to demonstrate continuing competence, changing educational programs, and reforming continuing education programs. The plan includes interdisciplinary meetings to build consensus and establish priorities and pilot projects to study the accuracy of various assessment and assurance methods. The final result is to demand that all healthcare professionals demonstrate their competence through one of a variety of acceptable methods, with an emphasis on the use of portfolios.

The Pew Task Force on Health Care Workforce Regulation[13] and the Joint Commission of Accreditation of Healthcare Organizations[14] believe that existing processes for credentialing are ineffective at facilitating continuous review of competence. The Pew Task Force supports 4 concepts: performance monitoring, proctoring, simulation, and continuous clinical practice evaluation. Performance monitoring may be used when issues affecting the practitioner's ability to provide safe, high-quality care are identified. Monitoring may include chart review, evaluation of clinical practice patterns, simulation, proctoring, and external peer review. These proposed revisions would establish additional evidence-based, consistent processes for determining the competence of practitioners to provide high-quality, safe patient care. In addition, it was recommended that regulatory boards implement and evaluate continuing competency requirements. Competency testing could be "triggered" by a variety of markers, including disciplinary action or lack of certification. The task force recommended that states cooperate with private sector organizations to develop and implement standardized examinations and continuing competency assessment for practice.

Currently, the most common competency requirement for nursing licensing boards is continuing education. To demonstrate the maintenance of competence, 1 essential element is to integrate some form of assessment. One recurring theme is for nursing to embrace a portfolio approach to evaluate continued professional competence.

The standards used by the Department of Veterans Affairs (DVA) to evaluate professional nursing practice are based, in part, on American Nurses Association (ANA) standards. Through a peer-review process referred to as "boarding," DVA's Nursing Professional Standards Board evaluates and promotes Veterans Affairs nurses based on their achievement of the ANA nursing standards of practice and performance. A metric is used to calculate the peer-reviewed evaluation.

PORTFOLIOS IN EDUCATION

The education profession has used portfolios as a tool to assess, evaluate, and/or understand the progress and competence of students and teachers. Reflecting on what has been learned is an important part of constructing a portfolio to demonstrate learning and competence. A collection of portfolios can also help a teacher or assessor reflect on the strengths and weaknesses of a course or curricula. It can point out strong links made by students and indicate struggles and successes that students had with different topics in the program of study. A student portfolio can show

- learning progress over time,
- student's current best work,
- comparison of best work to past work,
- development of self-assessment skills,
- development of reflective learning,
- individual's level and pace of work,
- clear evidence of learning to parents and others, and
- the amount of teacher-student collaboration involved.[15]

One expert suggests using 3 foci to promote personal interrogation for learning: reflection, artifacts/examples, and projection/direction.[16,17] A reflection for each standard explains how the student has accomplished this criterion. This is where the student writes realistic assessments stating, "I learned…." After each reflection, the student then identifies examples of works or experiences that demonstrate having met a standard. Finally, the portfolio can be a lifelong learning tool when reflections are used to set goals or outcomes for future learning. This step answers the question, "Now what?"

PORTFOLIO DEVELOPMENT PROCESS

A portfolio can be described as a collection of materials chosen by an individual to provide evidence of skills, knowledge, attitudes, and achievements that reflect the current development and activity of that individual. Portfolios are generally in written form, although pictures, diagrams, models, and computer imaging may also be useful. The portfolio should be professional and clearly organized. The individual needs to pay careful attention to the composition, appearance, and size of the portfolio. Size is important to ensure that the portfolio is not overwhelming to the evaluator and does not contain extraneous materials. The rationale for selecting items to include should be aimed at demonstrating

the designated learning outcomes or evaluation criteria. Therefore, materials chosen will depend on the purpose that the portfolio is designed to achieve. As such, it should be considered a fluid document.

Before developing a portfolio, an individual should obtain clear guidelines on the content and structure of the proposed portfolio. Some experts suggest that it can be helpful to have examples or portfolio templates available to help the learner get started in the development of his or her own portfolio (Table 1).[18] Competencies included will differ depending on the portfolio's purpose. Portfolios can be used for course completion, certification requirements, licensing requirements, residency/fellowship applications, job applications, or other professional development activities.[19]

TABLE 1: Sample Portfolio Template

Statement of Purpose
Objectives
Title Page
Table of Contents
List of Competencies
Activities and rationale for each competency
Resources
Recommendations

Information from McMullan et.al.[18]

A Web-based application has been described in the literature as an innovative evaluation tool for competency assessment using portfolios.[20] In this evaluation tool, designed to evaluate portfolios for graduate medical education, 6 domains were used: patient care, medical knowledge, interpersonal and communication skills, professionalism, practice-based learning and improvement, and system-based practice. The individual enters information into the portfolio based upon patient care experiences, procedures, conference attendance, documentation, and patient care logs. There is also a section for reflection and planning. The authors felt that this method was a challenge in terms of reliability and validity but that it offered great promise in attempting to evaluate competence. Additional research is needed in this area, although it is expected that the development of Web-based and electronic portfolios will continue to increase.

Criteria to assess student performance on the learning that resulted from developing a learning portfolio are critical for either formative or summative evaluation. Examples of evaluation forms include checklists of items and ratings of aesthetic qualities.[21] One example of an improvement portfolio includes a 4-point rating scale, from outstanding to unsatisfactory, to be used for evaluating students on their improvement in the following areas:

- understanding of concepts
- application of information
- reasoning ability
- writing skills
- speaking skills
- problem-solving skills

- performance skills
- computer skills
- self-assessment skills
- reflection skills
- work-study skills
- independent learning[15]

This list may also be used to rate students' reflections on each of these areas in their critical narratives. Because people differ in their writing and self-reflection skills, individuals with strengths in these areas may have higher portfolio ratings and a more positive view of portfolio development and utilization.[18] However, some individuals may also tend to write what they think the evaluator wants to read, thereby decreasing the value of the portfolio as a learning experience.[22]

Portfolios can be very time consuming, both in their development and their evaluation. However, the process of learning and the product of learning are assumed to be foundational to self-awareness embedded in definitions of competency.

VALUE OF PORTFOLIOS VERSUS CONTINUING EDUCATION FOR COMPETENCY ASSESSMENT

Continuing education and testing provide a limited picture of an individual's knowledge and/or skill acquisition in a limited area at one point in time. These concepts rely heavily on the individual's level of maturity and responsibility. This type of evaluation also depends, to some extent, on the individual's learning style and test-taking ability. Language skills and cultural differences may also exert a strong influence on this type of evaluation. However, portfolios have the advantage of promoting critical thinking, self-assessment, and individual accountability.

Individuals differ in their ability to self-reflect and self-evaluate. Some people may be too hard on themselves and focus too much on their own weaknesses. The portfolio may then come across as lacking in strength and substance and therefore not give a clear picture of the individual. Alternatively, an individual may concentrate too much on his or her self-identified strengths and therefore portray an image of himself or herself that is not entirely accurate.

Optimally, portfolios have the advantage over continuing education in helping to build the individuals' self-esteem, self-confidence, and self-evaluation skills. Portfolios are broader in scope and give a more complete picture of the individual's achievements, strengths and weaknesses, and professional goals and objectives.

Ethical issues involving privacy and confidentiality are important in portfolio development and assessment. The issues of confidentiality and anonymity need to be explored if there is an issue of objectivity and reliability as an assessment criterion if the individual revealed too much of his or her private thoughts.[23]

RELIABILITY AND VALIDITY OF PORTFOLIOS

For a portfolio to be an effective assessment tool, issues of reliability and validity need to be addressed. Individual raters (eg, teachers, employers, academic admission officials, others) of portfolios vary in their evaluation experience and skills. Because portfolio development is intended to assess the individual over a broad range of competency evaluation points, clear and specific evaluation tools are needed so that evaluators will have the appropriate guidelines to make effective and reliable judgments regarding grading, evaluation, employability, promotion, or admission.

Various guidelines and tools have been developed to attempt to meet the need for reliability and validity of portfolio assessment. One such tool designed to evaluate the credentialing of genetics nurses involves converting expert judgments to a numerical scoring system.[24] The expert judges are thoroughly trained and serve in this capacity for a minimum of 3 years. After the judges evaluate the portfolios according to clearly established standards, the numerical scores are entered into a computer program. This system reports an accuracy and validity rate of 97%.

One group of researchers studied the validity and reliability of portfolio assessment using Messicks' unified framework construct validity in a baccalaureate dental hygiene program.[25] There was a significant correlation ($r = 0.70$; $P \leq .01$) between the portfolios and grade point average, as well as empirical evidence for Messicks's external aspect of construct validity for portfolios as a means of assessing students' competency. A case could be made that the development of portfolios over time (ie, longitudinal data) is much more relevant than traditional licensing examinations, in which practitioners are tested one time to achieve licenses and maintain them based on continued education units.

Others argue that some methods of portfolio assessment are insufficiently reliable as the sole method for single-instance assessment but may have a place as part of the triangulation process.[26] These authors believe that repeated portfolio assessment by paired observers would increase reliability.

There seems to be much overall support for the use of portfolios in nursing and medicine.[20,27-30] A meta-analysis of portfolios and assessment of competence found that a holistic approach to competence seems to be compatible with the use of portfolios to assess competence, but the concept and its implementation are still evolving.[18] The authors conclude that a variety of assessment methods are needed, and portfolios have the potential to integrate these.

A qualitative study on the use of portfolios evaluated student learning in a school of nursing.[31] The researchers developed an interview and questionnaire guide to evaluate the students' assessment of the value of using portfolios to enhance their learning. They reported that the students favored the portfolio development system over traditional testing. In addition, the portfolios produced broader academic achievements, enhanced collaboration and teamwork, and enhanced the learning process in poorly motivated students.

Portfolios have been used with some reliability as a summative assessment of communication skills in second- year medical students as measured by an intraclass correlation coefficient of 0.771 (95% confidence interval, 0.678-0.840).[32] This suggests that discussion and negotiation between 2 independent assessors can enhance the reliability of the portfolio method. The Faculty of Medicine at

the University of Sydney used a combination of portfolio and interview to assess first-year medical students' personal and professional development. Ninety-six percent of the students (n = 195) said that this method provided useful reflection.[33]

Traditionally, certification by examination and/or recertification by examination in combination with continuing medical education has implied competency. Most specialty boards that award certification (ie, board certified) currently use a snapshot assessment of knowledge and skills by written examination and/or a combination of written examination and continuing medical education (typically 20 hours per year in a 3-year recertification cycle) as evidence for recertification. Knowledge testing encourages memorizing of facts. Education and information acquisition do not lead to changes in behavior.[34]

Physicians should be evaluated on their ability to find, assimilate into practice, and communicate specialized information (ie, information literacy) versus their ability to perform well as test takers.[35] The Royal Australasian College of Physicians has led the way in developing recertification criteria that more closely assess physicians' performance rather than attendance at traditional didactic continuing medical education programs. In the future, recertification for board-certified physicians may require specialists to submit computerized summary reports demonstrating their experience and learning portfolios.[35]

To ensure the reliability and validity of portfolios for evaluating competency, the following recommendations are crucial:

- Clear, measurable standards and criteria designed to meet the program's purpose need to be established and communicated to both the individual developing the portfolio and to the evaluator.
- Evaluators need to be thoroughly educated and tested (certified) in the use of the evaluation tool.
- Evaluators need to be reeducated at consistent intervals.

RECOMMENDATIONS FOR USING PORTFOLIOS TO EVALUATE COMPETENCY

Although examinations can be validated with psychometrics, providing accuracy and reliability of portfolio evaluation is more complicated. The Credentialing Committee of the International Society of Nurses in Genetics demonstrated that they have created and validated the evaluation of professional portfolios to provide a quality credential for nurses in genetics.[7]

The members of the Competency & Credentialing Institute's (CCI)[36,37] Research Committee conducted an integrative review of the literature on the use of professional portfolios as a method of assessing, demonstrating, and validating professional nursing competency. In 2006, CCI conducted a job analysis to define and measure content domains reflected in the examination for nurses who work in the perioperative setting (CNOR), an essential step in establishing examination content validity and domains of practice. Descriptive information about the tasks that nurses perform on the job and the knowledge and skills thought to be necessary for nurses to competently perform those tasks provides an evidence base for perioperative nurse competency assessment and validation, as well as credentialing. The job analysis validated the CNOR core competencies.

The CCI research committee members recommend that portfolio creation begins with an analysis of the following perspectives:

- current national healthcare initiatives
- trends related to healthcare patient safety
- quality
- [organizational] excellence
- nursing work role dimensions
- the ANA's standards of professional nursing practice and professional performance[38]

The CCI believes that the ANA standards of professional nursing practice and performance should undergird all nurse credentialing processes. The 6 standards of professional practice are assessment, diagnosis, outcomes identification, planning, implementation, and evaluation. In addition, the ANA provides 9 standards of professional performance: quality of practice, practice evaluation, education, collegiality, collaboration, ethics, research, resource utilization, and leadership. All of these professional and performance standards should be addressed and documented when assessing nursing portfolios. The Genetics Nursing Credentialing Commission, Inc, has developed a model for portfolio evaluation for professional competence and credentialing in genetics for nurses, which is based on the ANA standards of practice and the standards of the International Society of Genetics Nursing.[24,39]

Nursing practice in the current healthcare context is geared toward professional practice and improving the quality of patient care. The ANCC "14 Forces of Magnetism" provide an evidence-based context for professional nursing practice that is embedded in excellent service environments where there are improved patient outcomes, fewer reported errors, and increased nursing satisfaction.[40] The inter-relationship and connectedness of the ANA standards of practice and performance, core CNOR competencies, and the 14 Magnet forces are identified in Table 2.

TABLE 2: Synthesis of Current Trends/Perspectives Foundational to Portfolio Development

ANA Standards of Practice	ANA Standards of Professional Performance	CNOR Core Competencies (Job Analysis)	Magnet Forces
Assessment	Quality of practice	Assess health status	Quality of Care* Professional models of care
Diagnosis	Practice evaluation	Formulate nursing diagnosis	Quality improvement*
Outcomes identification	Education	Identify outcomes Evaluate patient responses to plan of care	Nurses as teachers Professional development
Planning	Collegiality	Develop plan of care Participate in discharge planning	Quality improvement*
Implementation	Collaboration	Implement plan to:	Includes all 14 Magnet forces
- Coordination of care - Health teaching and health promotion - Consultation - Prescriptive authority and treatment		- Prevent physical injury - Optimize physiological protection - Document peroperative activities - Select and use methods for cleaning, packaging, sterilizing, and disinfecting - Organize and coordinate team members, supplies, equipment, and support services - Communicate patient information - Implement plan of care consistent with patient rights and responsibilities - Implement plan of care to enhance patient/family education - Communicate patient information	Interdisciplinary collaboration
	Ethics	Implement plan of care consistent with patient rights and responsibilities Implement plan of care to enhance patient/family education	Interdisciplinary collaboration
	Resource utilization	Develop plan of care - Communicate patient information - Emergency situations	Community involvement Consultation and resources

	Leadership	Professional accountability	Quality of organizational leadership Chief nurse executive management style Image of nursing Autonomy
Evaluation	Research	Evaluate patient responses to plan of care†	Quality improvement

ANA indicates American Nurses Association; CNOR, certified nurse in the operating room.

*Sapnas, KG. (2006). ANA Standards, Magnet forces and excellence are related. Nightingale News, 1, 2, 5. Miami, FL: MiamiVA Healthcare System.

†Applies to multiple CNOR core competencies.

Competency & Credentialing Institute promotes advancing the conceptualization of nursing portfolio evaluation to include an evidence-based and current state-of-the-art framework by identifying global domains of nursing that include ANA and specialty organization scope and standards, core competencies, and the 14 Magnet forces to guide professional nurse competency and credentialing.

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